

REMARKS

Claims 24, 45, 59 and 71 are amended. Claims 24, 45, 52-61 and 71-73 are pending in the application.

Claims 24 and 52-54 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Ma, "Manipulation of the Ti/Si reaction path by introducing an amorphous Ge interlayer" (1995), pp. 35-37. In accordance with MPEP § 2131, anticipation requires each and every element of a claim to be disclosed in a single prior art reference. Claims 24 and 52-54 are allowable over Ma for at least the reason that Ma fails to disclose each and every element in any of those claims.

As amended, independent claim 24 recites forming a titanium metal layer on and in direct physical contact with a silicon containing material comprise by a substrate, and subsequently providing compressive stress inducing atoms into the titanium metal layer. The amendment to claim 24 is supported by the specification at, for example, Fig. 1, page 7, lines 5-13; page 12, lines 8-18 and Fig. 7. Ma discloses growing a 200 Å thick Ge film followed by a 500 Å thick Ti film. Ma does not disclose the claim 24 recited forming a titanium metal layer on and in direct physical contact with a silicon containing material comprised by a substrate and subsequently providing compressive stress inducing atoms into the titanium metal layer. Independent claim 24 is therefore not anticipated by Ma and is allowable over this reference.

Dependent claims 52-54 are allowable over Ma for at least the reason that they depend from allowable base claim 24.

Claims 45, 55-58 and 71-73 stand rejected under 35 U.S.C. § 102(a) as being anticipated by Kawamura, JP 08-139056. As amended, claim 45 recites forming a

refractory metal silicide on and in direct physical contact with a compressive stress inducing material layer which is formed over a first side of a substrate. Similarly, as amended, independent claim 71 recites forming a refractory metal silicide on and in direct physical contact with a compressive stress inducing material layer. Kawamura discloses a metal silicide 6 on a source/drain region 3 from which an oxidized film portion has been removed (paragraph 0034), and metal silicide 7 on a gate electrode 2. Kawamura does not disclose the claims 45 and 71 recited forming a refractory metal silicide on and in direct physical contact with a compressive stress inducing material layer. Accordingly, independent claims 45 and 71 are not anticipated by Kawamura and are allowable over this reference.

Dependent claims 55-58 and 72-73 are allowable over Kawamura for at least the reason that they depend from corresponding allowable base claims 45 and 71.

Claims 59-61 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ma as combined with Anjum, U.S. Patent No. 5,470,794. The Examiner is reminded by direction to MPEP § 2143 that a proper obviousness rejection has the following three requirements: 1) there must be some suggestion or motivation to modify or combine reference teachings; 2) there must be a reasonable expectation of success; and 3) the combined references must teach or suggest all of the claim limitations. Claims 59-61 are allowable over Ma and Anjum for at least the reason that the references, individually or as combined, fail to disclose or suggest each and every limitation in any of those claims.

As amended, independent claim 59 recites forming a titanium metal layer on and in direct physical contact with a silicon containing material comprised by a substrate, and subsequently implanting compressive stress inducing atoms comprising germanium into

the titanium metal layer. As indicated above, Ma does not disclose the recited forming a titanium metal layer on and in direct physical contact with a silicon containing material comprised by a substrate. Further, Ma does not suggest this recited feature and claim 59 is not rendered obvious by Ma. As indicated by the Examiner at page 6 of the present Action, Anjum is relied upon as disclosing implanting Ge atoms to reduce the temperature of formation of titanium silicide. However, as combined with Ma, implanting Ge as disclosed by Anjum does not contribute toward suggesting the claim 59 recited forming a titanium metal layer on and in direct physical contact with a silicon containing material comprised by a substrate. Accordingly, independent claim 59 is not rendered obvious by the combination of Ma and Anjum and is allowable over these references.

Dependent claims 60-61 are allowable over the combination of Ma and Anjum for at least the reason that they depend from allowable base claim 59.

For the reasons discussed above pending claims 24, 45, 52-61 and 71-73 are allowable. Accordingly, Applicant respectfully requests formal allowance of such pending claims in the Examiner's next action.

Respectfully submitted,

Dated: March 30, 2004

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